Marquette County Road Commission - CR 595

Methods for MNFI Natural Community Type Identification

August 16, 2012

During the week of May 21 to 25, 2012, KME biologists investigated the proposed CR 595 route in order to identify Michigan Natural Features Inventory (MNFI) S3 natural communities. The entire length of the proposed CR 595 route was traversed on foot and via vehicle (where possible). Forested and non-forested wetlands where categorized according to ecological community type, adhering to MNFI guidelines.

Forested wetlands were typically identified by KME as any of the following: Hardwood-Conifer Swamp (S3), Rich Conifer Swamp (S3), Northern Hardwood Swamp (S3), Muskeg (S3), Poor Conifer Swamp (S4), or generically as Hardwood Swamp (element occurrence ranking not applicable).

A forested wetland was typically identified by KME as Hardwood-Conifer Swamp (S3) if it met all of the following criteria:

- Comprises more than just a small patch (i.e., more than a fraction of an acre);
- The overstory is composed of maturing or mature hardwood deciduous species (e.g., yellow birch, black ash, red maple, American elm) and coniferous species (e.g., white cedar, eastern hemlock, black spruce, tamarack);
- A dominant component of the hydrology is characterized by headwater ephemeral or permanent streams (i.e., surface water) and/or near-surface groundwater flow or discharge (e.g., seeps);
- There has been no significant ecological change. For example, recent or re-occurring logging, sedimentation, changed hydrology, over-run by invasive species, etc., that have altered the community significantly from its “natural” state.

A forested wetland was typically identified by KME as Northern Hardwood Swamp (S3) if it met all of the following criteria:

- Comprises more than just a small patch (i.e., more than a fraction of an acre);
- The overstory is dominated by maturing or mature black ash, often with other hardwood deciduous species present in the overstory (e.g., yellow birch, red maple, American elm);
- Exhibits a diverse and dense ground flora and microtopography; Strong evidence of being seasonally saturated to inundated in spring and following heavy rains, resulting in numerous sparsely vegetated to bare areas in the understory and ground layers;

- There has been no significant ecological change. For example, recent or re-occurring logging, sedimentation, changed hydrology, over-run by invasive species, etc. that have altered the community significantly from its “natural” state.

Occasionally a forested community type was encountered that could not be classified within the MNFI system. For example, some small, hardwood-dominated wetlands did not have characteristics typically associated with various MNFI-described forest community types. For the purposes of this study, KME classified these simply as hardwood swamp (HS).

Photo 1: Wetland E4/E5 (near station 1282) is an example of a forested wetland categorized generically as Hardwood Swamp (HS). Note that the relatively young maples are dominant within the overstory. Overstory conifers and/or black ash are virtually nonexistent. There may be an occasional balsam fir, spruce, or other conifer within the mid-story or sapling/shrub stratum. Hydrological complexity appears to be low (no spring seeps, headwater streams, or significant vernal pool areas).

Photo 2: The north-central portion of wetland E9 (near station 1269) is an example of a wetland that was not categorized by KME as an S3 community. This wetland may have been a Hardwood-Conifer Swamp (S3) historically, but hydrology (e.g., duration of flooding) appears to have been modified significantly by Trail 5 and/or beaver activity, effectively promoting an emergent marsh within the foreground and also promoting a mixed emergent/shrub/tree community within the background (note dead/dying trees within background of photo). The background left side and right side are mixed upland forest.

Photo 3: Wetland E13 (near station 1254) is another example of a forested wetland categorized generically as Hardwood Swamp (HS). Note the relatively young maples are dominant within the overstory. Overstory conifers and/or black ash are virtually nonexistent. There may be an occasional balsam fir, spruce, or other conifer within the mid-story or sapling/shrub stratum. Hydrological complexity appears to be low (no spring seeps, headwater streams, or significant vernal pool areas).

Photo 4: The northern portion of wetland E17 (near station 1241) is another example of a forested wetland categorized by KME generically as Hardwood Swamp (HS). Note the relatively young maples are dominant within the overstory. Overstory conifers and/or black ash are virtually nonexistent. In this situation, there are occasional balsam fir and/or spruce within the mid-story and sapling/shrub stratum. Hydrological complexity appears to be low (no spring seeps, headwater streams, or significant vernal pool areas).